

REMARKS

Summary of Office Action

Claims 11-18 stand rejected under 35 U.S.C § 103(a) as allegedly being unpatentable over Molsen et al. (U.S. Patent No. 6,122,024) in view of Sakai et al. (U.S. Patent No. 6,222,603).

Claim 22 stands rejected under 35 U.S.C § 103(a) as allegedly being unpatentable over Molsen et al. in view of Sakai et al., and further in view of Hiji et al. (U.S. Patent No. 5,872,609).

Summary of Amendment

Claim 11 has been amended. No new matter has been added. Claims 11-18 and 22 are pending for consideration

All Claims Comply With § 103

Claims 11-18 stand rejected under 35 U.S.C § 103(a) as allegedly being unpatentable over Molsen et al. in view of Sakai et al. Claim 22 stands rejected under 35 U.S.C § 103(a) as allegedly being unpatentable over Molsen et al. in view of Sakai et al., and further in view of Hiji et al. Applicant respectfully traverses.

As amended, independent claim 11 recites, in part, “wherein the photo-reactant material and the liquid crystal material form a polymer network and are mixed without distinction of layer... wherein, when no voltage is applied across the two electrodes, the photo-reactant material and the liquid crystal interact and are aligned in a first direction and, when a voltage is applied across the two electrodes, the liquid crystal are arranged by the applied electric field in the horizontal direction, and wherein, when the voltage is not applied across the two electrodes,

the polymer network increases a restoring force to restore the liquid crystal.” Support for this feature can be found in FIGs. 6A and 6B and at least on pages 12 and 13, paragraphs [0041]-[0043] as originally filed. Accordingly, no new matter has been added.

Molsen et al. fails to teach or suggest at least such features. In particular, Molsen et al. discloses that nematic liquid crystals 8 and helical polymer network 9 are distinguished and formed into a plurality of layers. Accordingly, Molsen et al. fails to disclose that the photo-reactant material and the liquid crystal material form a polymer network and are mixed without distinction of layer, as recited in amended claim 11. While Molsen et al. discloses that fast switching speed is produce by the restoring forces due to the fixed helical polymer (col. 3, ll. 54-55), Molsen et al. fails to disclose that when no voltage is applied across the two electrodes, the photo-reactant material and the liquid crystal interact and are aligned in a first direction and, when a voltage is applied across the two electrodes, the liquid crystal are arranged by the applied electric field in the horizontal direction, as recited in amended claim 11.

Sakai et al. does not and cannot cure at least this deficiency. Therefore, Molsen et al. and Sakai et al., whether taken individually or in combination, fail to teach all the features of independent claim 11. Additionally, claims 12-18 depend from claim 11, thereby incorporating all the features of claim 11. Accordingly, Molsen et al. and Sakai et al., whether taken individually or in combination, fail to teach all the features of claim 12-18 for at least the reasons discussed above.

Claim 22 depends from independent claim 11, thereby incorporating all the features of claim 11. Hiji et al. discloses a light control layer 50 laminated on a non-sensitive layer 51 and a

sensitive layer 52 alternately in the vertical direction and containing an oriented liquid crystal as shown in Fig 1A to 2B. When voltage is applied between electrodes 43 and 44, the liquid crystal molecules in the non-sensitive layer 51 formed in the high crosslinking density area do not respond to the voltage while only the liquid crystal molecules in the sensitive layer 52 formed in the low crosslinking density area easily respond to the voltage. Accordingly, the liquid crystal molecules in the sensitive layer 52 change into the other direction causing a difference in refractive index between the non-sensitive layer 51 and the sensitive layer 52. However, Hiji et al. fails to disclose that the photo-reactant material and the liquid crystal material form a polymer network and are mixed without distinction of layer, as recited in amended claim 11. Therefore, Molsen et al., Sakai et al., and Hiji et al., whether taken individually or in combination, fail to teach all the features of claim 22 for at least the reasons discussed above.

Accordingly, Applicant respectfully requests that the rejections to claims 11-18 and 22 be withdrawn.

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CONCLUSION

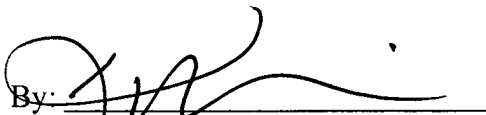
In view of the foregoing, reconsideration and timely allowance of the pending claims are respectfully requested. Should the Examiner feel that there are any issues outstanding after consideration of the response, the Examiner is invited to contact the Applicant's undersigned representative to expedite prosecution.

If there are any other fees due in connection with the filing of this response, please charge the fees to our Deposit Account No. 50-0310. If a fee is required for an extension of time under 37 C.F.R. 1.136 not accounted for above, such an extension is requested and the fee should also be charged to our Deposit Account.

Respectfully submitted,

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